AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A system for performing fluid administration on a patient comprising:

- a liquid pump (1),

- a liquid distribution system (2) connected to said pump (1) in such a way that liquid can flow from the liquid distribution system (2) to the pump (1) and vice versa,

- liquid supply means (3) for supplying liquid to a patient (4) via said liquid distribution system (2) and said pump (1),

- a patient conduit (5) adapted for connecting said liquid distribution system (2) to a patient (4),

wherein ~~characterized by the fact that~~ said liquid distribution system (2) comprises two distinct hub chambers (7,8) which are separated by a space, the first hub chamber (7) including at least one liquid supply port with dedicated valve means (9), one patient port with dedicated valve means (10) and one pump inlet (26) ~~,~~, the second hub chamber (8) including at least ~~,~~ one patient port (18) or warmer port (16) with dedicated valve means and one pump outlet (27), said system further ~~more~~ comprising control means arranged to close said patient port (10) of the first hub chamber (7) when said liquid supply port (9) is open and vice versa.

2. (original) System according to claim 1 wherein said second hub chamber (8) furthermore includes at least one drain port with dedicated valve means (11), said control means being also arranged to close said patient port (18) of the second hub chamber (8) when said drain port (11) is open and vice versa.

3. (previously presented) A system according to claim 1 wherein said liquid distribution system (2) only includes two hub chambers (7,8).

4. (previously presented) A system according to claim 1 furthermore comprising a warmer system (28), a cavity (17) including a warmer port (19) and a patient port (16), said patient port (18) of the second hub chamber (8) being connected to said warmer port (19) via said warmer system (28).

5. (original) A system according to claim 4 wherein said warmer system (28) is a warmer in-line.

6. (currently amended) A system according to claim 5 wherein said warmer in-line comprises a warming plate contained therein, such warming plate being covered by a warming pouch ~~like a sock~~.

7. (original) A system according to claim 6 wherein said warming pouch is composed of a liquid channel which forces the liquid to be maintained within such warmer for a certain duration at a given flow rate.

8. (previously presented) A system according to claim 1 wherein said first hub chamber (7) includes several liquid supply ports with respective valve means (9).

9. (currently amended) A system according to claim 8 wherein said liquid supply ports (9) are connected to respective liquid supply means ~~having~~ each having a different kind of liquid.

10. (previously presented) A system according to claim 1 wherein said liquid pump is a peristaltic pump.

11. (previously presented) A system according to claim 10 wherein said peristaltic pump is unidirectional.

12. (previously presented) A system according to claim 1 wherein said liquid pump (1) is composed of a tubing and rolling surface on which the tubing is compressed once the cartridge is inserted into a pumping device containing rollers.

13. (previously presented) A system according to claim 12 where said rollers (22) are of a conical shape in such a way as to be self inserted in the pump race, i.e. without any other mechanism.

14. (original) A system according to claim 12 where said rollers are of a spherical shape.

15. (previously presented) A system according to claim 1 wherein said liquid pump (1) comprises a flexible or partially flexible channel and a series of movable finger elements successively situated above said channel, each finger element being movable along a direction which is substantially perpendicular to said channel, all finger elements being adapted to induce a peristaltic movement along said channel.

16. (previously presented) A system according to claim 15 wherein each finger element comprises a convex basis adapted to conform with the channel inner surface and a shaft adapted to be linked to an actuator.

17. (previously presented) A system according to claim 1 wherein said liquid pump (1) and said liquid distribution system (2) are fixed together to form a single cartridge.

18. (previously presented) A system according to claim 17 wherein said liquid pump (1) is fixed to said liquid distribution system (2) by vibration attenuation means in order to minimize the vibration on the liquid distribution system (2) when the pump is operating.

19. (previously presented) A system according to claim 1 wherein all hub chambers, including said ports and ports, are made within one single part.

20. (previously presented) A system according to claim 19 wherein said single part is an injected part of plastic material.

21. (previously presented) A system according to claim 1 wherein each hub chamber (7,8) is closed with an upper wall made of a flexible membrane (13), said membrane including valve elements (39) situated above each of said port or port with valve means, said valve elements (39) being designed to close said port or port when the membrane (13) moves downwardly.

22. (currently amended) A system according to claim 1 wherein each hub chamber (7,8) is closed with an upper wall made of a flexible membrane (13), said

membrane including clipping means adapted to clip elements ~~such as valve actuating or finger elements~~.

23. (previously presented) A system according to claim 22 wherein said membrane is molded.

24. (currently amended) A system according to claim 23 wherein said membrane is made out of any of the following materials: silicone~~,~~ or ~~Kraton™~~, ~~Santoprene™~~, polyurethane~~, Pebax™ or Biopure™~~.

25. (previously presented) A system according to claim 24 wherein said membrane includes liquid tight joints.

26. (previously presented) A system according to claim 21 wherein said membrane extends in such a way that it also covers said liquid pump (1).

27. (currently amended) A system according to claim 12 wherein said liquid pump (1) comprises a flexible or partially flexible channel, a~~said~~ membrane covering said channel along an oblique plane, preferably at 45°, in order to allow a peristaltic movement induced by rollers or similar elements.

28. (currently amended) A system according to claim 27 comprising individual actuators or a cam ~~(e.g. a disc with a vawe)~~ adapted to induce a peristaltic movement.

29. (previously presented) A system according to claim 28 wherein said individual actuators are adapted to be actuated by fingers which are clipped to said membrane.

30. (previously presented) A system according to claim 1 wherein said liquid distribution system includes liquid tight joints arranged in such a manner that they allow a liquid tight connection between said liquid distribution system and a membrane situated on it.

31. (previously presented) A system according to claim 21 wherein said membrane contains protruding elements designed for a liquid tight connection between said hub chambers.

32. (currently amended) A system according to claim 21 wherein each of said valve elements (39) is designed to be clipped to an actuator (34)~~, e.g. an electromagnetic actuator or a magnet,~~ arranged above said membrane (13).

33. (previously presented) A system according to claim 32 wherein each of said valve elements comprises a cavity designed to receive and hold the plunger of an actuator, said cavity having an height which substantially corresponds to at least the valve displacement.

34. (previously presented) A system according to claim 21 wherein said membrane (13) is press-fitted along its external border to the liquid distribution system, the membrane (13) being furthermore held by a frame (14) .

35. (previously presented) A system according to claim 21 wherein said membrane (13) contains a portion (15) which is forming part of a pressure sensor.

36. (previously presented) A system according to claim 35 wherein the active area of said pressure sensor is designed to be more flexible than the remaining area.

37. (previously presented) A system according to claim 35 wherein said pressure sensor has the shape of a disc of which the periphery is gripped, said disc furthermore comprising an annular ply.

38. (previously presented) A system according to claim 35 wherein said pressure sensor is situated on the patient line, independently from said hub chambers.

39. (previously presented) A system according to claim 35 furthermore comprising a second pressure sensor, said second pressure sensor being in connection with the first hub chamber.

40. (previously presented) A system according to claim 1 wherein said liquid distribution system includes an air sensor situated on the patient conduit side.

41. (previously presented) A system according to claim 1 comprising a cartridge loading mechanism which allows a tight connection between the membrane and the valves and the liquid distribution system.

42. (previously presented) A system according to claim 1 comprising flow blocking means adapted to block the flow towards or from the liquid distribution system when this latter one is released out of the system.

43. (previously presented) A system according to claim 42 wherein said blocking means is a mechanical clamp situated on the patient line.

44. (original) A system according to claim 42 wherein said blocking means is a lip valve situated on the patient line, the system furthermore comprises a movable pin adapted to open said lip valve when the liquid distribution system is released out of the system.

45. (previously presented) A system according to claim 21 comprising a molded frame adapted to cover the space between said hub chambers, each space above said hub chambers being covered by a flexible membrane.

46. (currently amended) A system according to claim 45 wherein said molded frame is fixed to said liquid distribution system, ~~e.g.~~ by ultrasound, laser welding, gluing or thermal bonding.

47. (currently amended) A system according to claim 45 wherein said molded frame is at least partially made of silicone or ~~Kraton™~~, Polyurethane™, ~~Pebax™ or Biopure™~~.

48. (previously presented) A system according to claim 45 wherein said frame, membrane and liquid distribution system are obtained by overmolding technique.

49. (previously presented) A system according to claim 21 using a double layer membrane adapted to prevents spallation or particule release into the fluid during use.

50. (previously presented) A system according to claim 1 furthermore comprising a window for detecting correct positioning of the tube.

51. (previously presented) A system according to claim 21 furthermore comprising a rigid plate (67) which covers and holds the membrane (13), said rigid plate (67) comprising holes (70) adapted to let moving elements passing through.

52. (previously presented) A system according to claim 51 wherein said rigid plate (67) includes pins (68) situated on the membrane side, said pins (68) being adapted to be fixed on the liquid distribution system (2).

53. (original) A system for performing fluid administration on a patient comprising a flexible membrane forming a valve seat characterized by the fact that said membrane includes a clipping mechanism adapted to be reversibly attached to a moving actuator in such a way that the membrane movement can be controlled in a push and a pull operation mode.

54. (previously presented) A liquid distribution system (2) for a system performing fluid administration on a patient as defined in claim 1.

55. (previously presented) A pressure sensor for a system for performing fluid administration on a patient as defined in claim 35.

56. (previously presented) Method of use of the system as defined in claim 1 wherein said patient port (10) is closed when said liquid supply port (9) is open and vice versa.

57. (previously presented) Method according to claim 56 wherein the pressure is always maintained positive with respect to the drain.

58. (previously presented) Method according to claim 56 wherein said liquid is always pumped in the same direction.

59. (previously presented) Method according to claim 56 consisting of sensing the liquid pressure entering and exiting the liquid distribution system and, if necessary, correct the pump flow rate in accordance with the pressure difference.

60. (previously presented) Method according to claim 56 consisting in regulating the pump flow rate according to a known predetermined alteration of the flow rate by aging of the tubing.

61. (previously presented) Method according to claim 56 wherein the drain phase is a function of the drain speed, said drain phase being ended when the speed is reaching a certain value based on the patient peritoneal cavity pressure measurement.

62. (previously presented) Method according to claim 56 wherein the peritoneal volume filled during a cycle is a function of the intra-peritoneal pressure.

63. (previously presented) Method according to claim 62 wherein the peritoneal cavity is partially emptied as soon as the pressure has reached a predefined threshold.

64. (previously presented) Method according to claim 56 consisting in the use of a low Natrium concentration liquid for the last exchange cycle to improve ultra-filtration.

65. (currently amended) Use of a system as defined in claim 1 for peritoneal dialysis comprising:

selecting a liquid,

supplying the liquid to a patient via use of the system for peritoneal dialysis.